

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
NORFOLK DIVISION**

CENTRIPETAL NETWORKS, LLC,

Plaintiff,

V.

PALO ALTO NETWORKS, INC.,

Defendant.

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No. 2:21-cv-00137-EWH-LRL

PUBLIC VERSION

**PLAINTIFF CENTRIPETAL NETWORKS, LLC'S MEMORANDUM
IN SUPPORT OF ITS MOTION FOR JUDGMENT AS A MATTER OF LAW
PURSUANT TO FED. R. CIV. P. 50(a)**

I. INTRODUCTION

The Court should enter judgment as a matter of law (“JMOL”) that (i) claim 8 of the ’437 Patent is valid, (ii) the asserted claims of Claim 10 of the ’903 Patent; Claims 1, 12, 17 of the ’797 Patent; Claims 1 and 9 of the ’573 Patent are patent-eligible, (iii) Palo Alto Networks, Inc. (“PAN”) directly and indirectly has infringed and continues to infringe the foregoing Asserted Claims, (iv) PAN’s infringement is willful, and (v) Centripetal is entitled to damages, because there is not a legally sufficient evidentiary basis for a reasonable jury to find in PAN’s favor on any of these issues.² A court may grant judgment as a matter of law when “a party has been fully heard on an issue during a jury trial and the court finds that a reasonable jury would not have a legally sufficient evidentiary basis to find for the party on that issue” Fed. R. Civ. P. 50(a)(1). Here, based on the evidence presented at trial, no reasonable jury could find for PAN, and therefore, Centripetal is entitled to judgment as a matter of law.

A. The Asserted Patents Are Valid

Centripetal is entitled to judgment as a matter of law that the patents are valid because PAN failed to carry its heavy burden of proving invalidity by legally sufficient clear and convincing evidence. Under 35 U.S.C. § 282, the Asserted Patents are presumed valid and, as the party asserting invalidity as a defense to infringement, PAN must present “clear and convincing evidence that the patent[s are] invalid” to survive the JMOL. *Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1365 (Fed. Cir. 2004). PAN failed to do so.

1. PAN Dropped Its Lack of Written Description Defense

During trial, PAN elected to withdraw its allegation that Claim 8 of the ’437 Patent lacks

² This motion supports Centripetals’ oral JMOL presented on January 30, 2024. (Trial Tr. at 1747:18-1750:4). Centripetal reserves all appellate rights regarding pre-trial and trial rulings, including, e.g., *Daubert*, summary judgment, and evidentiary rulings.

written description. PAN's expert, Dr. Nielson, did not provide any testimony or evidence for such an allegation. Accordingly, Centripetal is entitled to judgment as a matter of law that the Claim 8 of the '437 Patent is valid.

2. PAN Failed to Present Clear and Convincing Evidence that the Correlation Patents Were Well-Understood, Routine, and Convention at the Time of the Invention

PAN failed to prove that the asserted claims of the '903, '797, and '573 Patents (collectively, the "Correlation Patents") are patent ineligible under 35 U.S.C. § 101. Specifically, PAN failed to show that the asserted claims lack an inventive concept under step two of the inquiry set forth in *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 217 (2014). When analyzing whether the claim elements contain an inventive concept under step two, the Supreme Court requires examination of each claim element individually *and* "as an ordered combination" of elements. *Id.* "[A]n inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces." *BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016).

PAN's entire patent eligibility defense relies upon the unsupported testimony and PowerPoint presentation of Dr. Nielson. However, Dr. Nielson failed to do a proper analysis in addressing each claim element individually and as an ordered combination of elements. Trial Tr. 1580:15-1591:15. Dr. Nielson analysis was conclusory and based on word matching instead of providing any analysis. For example, he pointed to words such as "timestamp" in the literature, but failed to address the specific claim language, which requires different timestamps, calculating the differences, log entries, and correlating the data. Trial Tr. 1587:18-1588:18. Analyzing bits and pieces of individual claim elements, as Dr. Nielsen did, is insufficient to prove Step 2. Dr. Nielson did not even address whether the claims, as an ordered combination,

are “conventional, routine, and well-understood” other than in summary and conclusory fashion without reliance on evidence. Trial Tr. 1591:23-1593:9. Indeed, he failed to identify any reference that taught an action taken “responsive to” or “based on” the claimed correlation. Trial Tr. 1767:17-1768:20. Because PAN failed to present the evidence required under Step 2 of *Alice*, judgment as a matter of law should be awarded to Centripetal.

Centripetal, on the other hand, presented evidence that the asserted claims are patent eligible, including the testimony of Dr. Goodrich who relied on evidence including DX-552 (McDonald), DX-542 (Ivershen), and DX-579 (Deschenes), as well as the testimony of Centripetal’s witnesses David Ahn and Jonathan Rogers, to opine that the asserted claims were not “conventional, routine, and well-understood” at the time of the invention. Trial Tr. 1768:21-1770:22, 1774:10-1777:8. Thus, PAN failed to present a legally sufficient evidentiary basis such that a reasonable jury could find in its favor on the issue of §101 patent ineligibility.

B. Centripetal Is Entitled to Judgment as a Matter of Law that PAN Infringes the Asserted Claims of the Asserted Patents

Based on the evidence presented at the trial, no reasonable jury could find that the Accused Products do not meet every limitation of the asserted claims, either literally or under the doctrine of equivalents.

3. The Correlation Patents

(a) PAN’s Expert Applied an Improper Definition of “a Network Device”

PAN’s non-infringement defense is premised on a legally incorrect claim interpretation applied by its expert, Dr. Villasenor, who improperly defined “a network device” to mean only one “network device.” (Trial Tr. at 1469:20-1471:5). This is contrary to legal precedent holding that use of the indefinite article “a” or “an” in a patent means “one or more.” *KCJ Corp. v.*

Kinetic Concepts, Inc., 223 F.3d 1351, 1355 (Fed. Cir. 2000) (“This court has repeatedly emphasized that an indefinite article ‘a’ or ‘an’ in patent parlance carries the meaning of ‘one or more’ in open-ended claims containing the transitional phrase ‘comprising’”).

Indeed, Dr. Villasenor even acknowledged that in patent law, in general, “a” means more than one, but that he was not applying this construction in the context of his analysis of these claims. Trial Tr. at 1470:3-15. For this reason and based on the substantial evidence of infringement that Centripetal presented, it is entitled to judgment as a matter of law in its favor.

(b) NGFW with ACE infringes Claim 10 of the '903 Patent, Claims 1 and 12 of the '797 Patent, and Claims 1 and 9 of the '573 Patent

(i) Claim 10 of the '903 Patent

For Claim 10 of the '903 Patent, Centripetal presented substantial evidence of infringement that PAN did not rebut. Dr. Cole provided evidence that NGFWs with ACE are an apparatus with at least one processor and memory storing instructions (*i.e.*, PAN-OS) that cause the NGFWs with ACE to perform the elements of the claim. Trial Tr. 529:20-543:6; PX-200, 208, 341, 342, 388, 428. Centripetal also presented evidence that the NGFW with ACE determines it has received packets for a first request and has generated second packets with a second request when the NGFW acts as a proxy and provides a NAT translation modifying the first request into a second request. Trial Tr. 543:7-555:19; PX-182, 208, 393, 400. Dr. Cole also showed evidence that the [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. Trial Tr. 557:18-567:3; PX-393, 400.

Dr. Cole further testified that the NGFWs with ACE determine the differences between the transmission timestamp and the receipt timestamp by calculating the “elapsed time” of the session. Trial Tr. 567:4-570:12; PX-393, 400. He also testified how the NGFWs with ACE

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. Trial Tr. 570:13-577:2; PX-393-394, 400; Trial Tr. at 466:13-23 (8/9/2023 Zuk Tr. at 8:25-9:25, 40:25-42:07). Finally, Centripetal presented evidence of how the correlation is the impetus to generate and transmit the identification of the first host. Trial Tr. 577:3-580:23; PX-393-394, 400.

Dr. Villasenor argued that the NGFWs with ACE do not have transmission logs. Trial Tr. 1424:17-23. However, transmission logs are not a requirement of the asserted claim. Instead, all that the claim requires are log entries that correspond to a second set of packets that was generated by the network device. Trial Tr. 543:7-570:12 (citing PX-400 and PX-393). Regarding the determining the timestamp difference element, Dr. Villasenor failed to address the fact that the elapsed time is based on the session length (*i.e.*, the session end time and the start of the session). PX-393 at 572.

With regards to the correlating element, PAN attempted to inject a red herring during trial when it cross-examined Dr. Cole about “filters” and “patterns,” which were not the basis of Dr. Cole’s opinions that concerned IP address log entries. Trial Tr. 570:13-577:2, 737:2-14, 1439:16-1440:4. Mr. Zuk also admitted that the ACE correlates the NGFW generated logs. Trial Tr. 1332:10-1333:2. He did not rebut the correlation of log entries, instead, only testifying

about comparing logs. *Id.* Notably, neither Mr. Zuk or Dr. Villasenor rebutted the evidence of source code and internal PAN documents discussed by Dr. Cole for [REDACTED]

[REDACTED], including PX-394 and PX-400. Trial Tr. 570:13-577:2.

(ii) Claims 1 and 12 of the '797 Patent and Claims 1 and 9 of the '573 Patent

For Claims 1 and 12 of the '797 Patent and Claims 1 and 9 of the '573 Patent, Dr. Cole pointed to his testimony for similar claim elements (Trial Tr. 585:6-588:18, 638:13-645:4), and also addressed unique elements for each of the asserted claims. For the elements in the asserted claims of the 797 Patent (i) determine a correlation and (ii) generating/provisioning a rule based on the correlating, Dr. Cole showed that NGFWs with ACE determine a correlation using the pre- and post-NAT IP addresses. Trial Tr. 581:8-600:23; PX-393. Further, Dr. Cole testified how the correlation is the impetus to generate rules using auto-tagging and provision a packet-filtering device (*i.e.*, NGFW). Trial Tr. 591:21-599:9; PX-393, 367-368, 400. For Claims 1 and 9 of the '573 Patent, Dr. Cole also pointed to evidence for the fact that the communications with NGFWs with ACE can be encrypted. Trial Tr. 634:17-646:7.

Dr. Villasenor ignored Dr. Cole's actual analysis, the claim language, and the evidence presented at trial. Notably, he did not dispute Dr. Cole's analysis of generating and provisioning rules using auto-tagging. He argued that PAN cannot infringe because it knows the "host" before the correlating step, but that is irrelevant to infringement. Trial Tr. at 1419:19-22. For the claims of the '797 and '573 Patents, Dr. Villasenor failed to identify how knowing the host results in generating a rule. Trial Tr. at 1422:6-25.

Dr. Villasenor also argued that the NGFWs with ACE do not have transmission logs. Trial Tr. 1424:17-23. However, transmission logs are not a requirement of the asserted claims. Instead, all that the claims require are log entries that *correspond* to a second set of packets that

are transmitted by the network device, which, as discussed above, include NAT addresses. Trial Tr. at 543:7-570:12 (citing PX-400 and PX-393). There is no dispute that at least the majority, if not all, the post-NAT packets are transmitted. Dr. Villasenor also made the argument that a post-NAT packet *could* be dropped. That argument fails because under Dr. Villasenor's analysis, the NGFWs with ACE would infringe at least some of the time, which is still infringement.

Broadcom Corp. v. Emulex Corp., 732 F.3d 1325, 1333 (Fed. Cir. 2013) (“...an accused device that ‘sometimes, but not always, embodies a claim[] nonetheless infringes.’”) (citation omitted).

(c) The Cortex Products Infringe Claims 1 and 17 of the '797 Patent

The evidence at trial established that the Cortex Products—1) Cortex XDR and Cortex XSOAR and 2) Cortex XSIAM—directly infringe Claims 1 and 17 of the '797 Patent, and no reasonable jury could find otherwise. Dr. Cole provided evidence that Cortex Products are provided in a computer readable media. Trial Tr. 600:25-607:9; PX-370, 396, 400. Centripetal presented evidence that the Cortex Products determine that a network device has log entries corresponding to received packets from a first host and has log entries corresponding to transmitted packets to a second host. Trial Tr. 607:10-613:9; PX-192, 400; Trial Tr. at 466:13-23 (8/9/2023 Zuk Tr. at 176:07-177:07). Dr. Cole testified how the Cortex Products correlate based comparing the IP addresses (*i.e.*, pre-NAT addresses) of the received packets and the IP addresses (*i.e.*, post-NAT addresses) of the transmitted packets. Trial Tr. 613:10-618:13; PX-192, 396, 400. He also presented evidence that the Cortex Products determine a correlation using the pre- and post-NAT IP addresses. Trial Tr. 618:19-624:4; PX-361, 364, 400. Centripetal also presented evidence of how the correlation is the impetus to generate rules using alerts and EDLs and provision a packet-filtering device (*i.e.*, NGFW). Trial Tr. 624:5-634:15; PX-185, 192-193, 393, 400; Trial Tr. at 466:13-23 (8/9/2023 Zuk Tr. at 102:21-103:12).

Dr. Villasenor attempted to rebut Dr. Cole with a “host” argument and transmission argument, which was incorrect for the reasons discussed above. Further, as discussed above, he used improper claim interpretation when construing “a network device” to mean only one “network device.” Notwithstanding this, he failed to dispute the evidence that Dr. Cole presented that the endpoint agent sends logs entries for transmitted packets. Trial Tr. at 621:19-622:9 (citing PX-364 at 4). In addition, Dr. Villasenor’s testimony was contradicted by PAN’s own documents that state that the Cortex Products can perform log stitching with just one network device. Trial Tr. at 620:9-22; PX-361 at 9; *see also* PX-389 at 10. Dr. Villasenor failed to rebut the evidence discussed by Dr. Cole regarding the correlating and generating / provisioning a rule elements. Indeed, the evidence of PAN’s source code and internal documents went unrebutted as Dr. Villasenor did not dispute Dr. Cole’s analysis of log stitching or EDLs.

(d) NGFW (without ACE) + Cortex Products infringe Claims 1 and 9 of the ’573 Patent

Centripetal’s evidence established that the NGFWs (without ACE) and the Cortex Products directly infringe Claims 1 and 9 of the ’573 Patent, and no reasonable jury could find otherwise. In particular, Dr. Cole provided evidence that NGFWs (without ACE) and Cortex Products are a computing device with at least one processor and memory storing instructions that cause the NGFWs (without ACE) and the Cortex Products to perform the elements of the asserted claims. Trial Tr. 646:8-654:12; PX-196-199, 209, 340. Dr. Cole also provided evidence that NGFWs (without ACE) and Cortex Products identify and generate log entries for a plurality of encrypted packets received and transmitted. Trial Tr. 654:13-658:13. Dr. Cole testified how the NGFWs (without ACE) and Cortex Products correlate based comparing the IP addresses (*i.e.*, pre-NAT addresses) of the received packets and the IP addresses (*i.e.*, post-NAT addresses) of the transmitted packets. Trial Tr. 658:13-659:1. Finally, Dr. Cole testified how the correlation is

the impetus to generate rules using alerts and EDLs and provision a packet-filtering device (*i.e.*, NGFW). Trial Tr. 659:2-24. As discussed above, Dr. Villasenor makes unsupported or conclusory statements without addressing the underlying evidence presented by Dr. Cole.

(e) PAN Induces Infringement of Claim 1 of the '573 Patent and Claim 1 of the '797 Patent

Centripetal presented further evidence of PAN inducing infringement, *i.e.* that PAN had knowledge of the '573 and '797 Patents, PAN instructed its customers to perform the steps of the asserted claims, PAN knew its customers' actions would infringe, and that customers directly infringed. Trial Tr. at 660:10-661:11. PAN failed to rebut the evidence of inducement. Dr. Villasenor argued that PAN does not induce infringement because "nobody" infringes in general. Trial Tr. at 1452:2-15. The evidence at trial showed otherwise.

4. No Reasonable Jury Could Find That the Accused Panorama with NGFW Do Not Infringe Claim 8 of the '437 Patent.

The substantial evidence at trial also showed that PAN directly infringes Claim 8 of the '437 Patent, literally and under the doctrine of equivalents, and no reasonable jury could find otherwise. Claim 8 of the '437 Patent covers a system with processor and memory which provisions rules to a packet security gateway protecting a boundary of a network and configures a packet security gateway to receive inbound and outbound packets, modify a LAN switch such that the LAN switch is configured to drop the packets, and drops packets meeting the rules.

Centripetal's expert Dr. Mitzenmacher went through each and every claim element showing how the accused Panorama with NGFW meets each element, *citing* over 18 exhibits, testimony of PAN's corporate representatives, source code, and his own testing. *See e.g.*, Trial Tr. 873:1-961:9, 1009:8-1017:5, 581:8-661:9, 797:14-813:17 *citing* JX-2, PX-194, 207, 357,

359, 390, 400, 413, 424, 435, 446, 457, 460, 461, 466, 528, 529, 543, 549.³ PAN did not dispute many of the claim elements, and instead only disputed the “provision ... a packet security gateway ... with one or more rules to be applied to all network traffic traversing the boundary” and the “modifying a switching matrix” element.

For the provision element, Dr. Mitzenmacher presented overwhelming evidence that PAN applies rules and inspects all traffic traversing the boundary. Trial Tr. 877:2-21; 880:13-881:21; 884:6-886:12, 891:5-905:14, 909:12-931:9; PX-194, 357, 359, 390, 413, 424, 435, 446, 460, 461; PX-400 at 102-103, 135, 239-240; Zuk Tr. at 300:1-8; Ralston Tr. at 193:13-18; *see also* Trial Tr. 1009:8-1010:4, 1010:14-1011:5 (citing PX-194). In fact, PAN’s witness Mr. Zuk admitted that the NGFW will inspect all traffic that traverses a network depending on the deployment. Trial Tr. at 1357:15-18; *see also* Trial Tr. 1486:14-16.

Instead of addressing the evidence that Dr. Mitzenmacher put forth, PAN heavily relied on DX-1⁴ and argued that [REDACTED]. DX-1 relates to an older product, *i.e.*, PAN-OS 7.0, which do not have many of the accused features. DX-1 at 1. Indeed, PAN’s expert Dr. Villasenor’s admitted that DX-1 does not mention zero-trust and EDLs, which are at issue in the ’437 Patent and the accused products. Trial Tr. 1501:16-22. Also, Dr. Mitzenmacher testified that there is not a one-to-one mapping between the boxes in DX-1 and all the places where the security policies also applied. Trial Tr. 986:18-987:4. PAN presented no evidence to the contrary, particularly on how the accused features are actually implemented in the flow chart in DX-1.

Furthermore, other than *ipse dixit* testimony, PAN has not presented any evidence that

³ PX-549 is what Dr. Mitzenmacher used, with similar information as admitted exhibit DX-1.

⁴ At trial, Defendant also used DX-286 which is an excerpt from DX-1.

there is any sort of security bypass in the NGFWs. For example, when confronted with PAN's documents, Dr. Villasenor did not dispute that the documents state that the NGFWs inspect all traffic and apply security rules to them. Trial Tr. 1492:1-1494:2. He also acknowledged that there has not been a single security breach at layer 2. Trial Tr. 1503:6-9. This was consistent with Mr. Zuk's admission on cross-examination that "if you are allowed everything in, then you're probably doing something wrong." Trial Tr. at 1358:15-16. Indeed, given that DX-1 is a document published on the Internet, it could not have possibly described any type of bypass of firewall security, as hackers will certainly exploit it.

The remainder of Dr. Villasenor's testimony was either not supported by the evidence, or irrelevant as it was not based on the claim language or the Court's claim construction. For example, Dr. Villasenor testified about the checksum feature of the NGFWs. But if a packet cannot pass the checksum, it is an error condition, namely, that "packet" is, in fact, not a packet. In other words, the error condition is not a packet that traverses the boundary of a network as required by the claim language. Trial Tr. 1491:11-16. In fact, aside from this error condition check on an invalid packet, Dr. Villasenor agreed that security rules such as EDLs will be applied to the network traffic. *Id.*

To the extent that Dr. Villasenor argued that a packet simply arriving at the firewall would meet the claim element of packets traversing the boundary, that is irrelevant since that packet does not "traverse" the boundary. Trial Tr. 1490:15-20; *see also* Claim 8 (describing traversing the boundary *via* the packet security gateway). Also, to the extent that Dr. Villasenor argued that provisioning rules means sending down the rules from Panorama to NGFWs, that argument was expressly rejected in the Court's claim construction order. Dkt. No. 452 at 29-30.

For the modifying a switching matrix element, Dr. Mitzenmacher presented substantial

evidence that the accused system [REDACTED]. *See, e.g.*, PX-357, 543, 528; Ralston Tr. at 36:10-37:2; Trial Tr. at 937:19-938:19, 948:20-956:6, 1003:22-1004:13; 1016:14-1017:5. Dr. Villasenor failed to rebut this evidence and instead focused the argument on [REDACTED] which is not what Dr. Mitzenmacher accused as the [REDACTED]. In fact, when asked what Dr. Mitzenmacher actually accused as the [REDACTED] [REDACTED], Dr. Villasenor agreed. Trial Tr. at 1486:2-23. [REDACTED] [REDACTED] t. *See, e.g.*, PX-357, 543, 528; Ralston Tr. at 36:10-37:2; Trial Tr. at 937:19-938:19, 948:20-956:6. In other words, bulk of Dr. Villasenor's arguments have nothing to do the infringement. Dr. Villasenor's testimony is not based on any documents, further highlighting that PAN failed to present evidence.

With respect to the doctrine of equivalents, Dr. Villasenor did not present any documents rebutting Dr. Mitzenmacher, and instead only stated in conclusory fashion that Dr. Mitzenmacher's analysis did not matter. Trial Tr. 877:2-21; 880:13-881:21; 884:6-886:12, 891:5-905:14, 909:12-931:9, 957:5-7; PX-194, 357, 359, 390, 413, 424, 435, 446, 460, 461; PX-400 at 102-103, 135, 239-240; Zuk Tr. at 300:1-8; Ralston Tr. at 193:13-18; *see also* Trial Tr. 1009:8-1010:4, 1010:14-1011:5. Since Dr. Villasenor did not rebut Dr. Mitzenmacher's doctrine of equivalents opinion, Centripetal's JMOL on this issue should be granted.

C. Centripetal is Entitled to Judgment as a Matter of Law Regarding Willful Infringement

Centripetal presented evidence of PAN's pre-suit knowledge of the Asserted Patents and intent to infringe. Knowledge of the specific asserted patent is not requirement to support a finding of willful infringement. Rather, pre-suit knowledge is based on the totality of the circumstances and can be based on circumstantial evidence. *Illumina, Inc. v. BGI Genomics Co.*, No. 19-cv-03770-WHO, 2022 WL 899421, at *13-15 (N.D. Cal. Mar. 27, 2022).

Centripetal showed that it marks its products upon issuance of the patents, and PAN knew of the assertion of infringement. Trial Tr. 339:18-20; 340:13-15; 341:2-20; 660:15-661:9; PX-787. Centripetal also produced evidence including discussions with PAN via Oppenheimer (*id.* at 353:10-354:5) (PX-944) as well as Centripetal's discussions with PAN about the patented technology, which included sending a teaser document and technical presentation (*id.* at 359:17-362:9); *id.* at 362:10-363:25; as well as Centripetal's NDA with PAN (*id.* at 354:13-358:2) (PX-122). Centripetal's COO, testified regarding LeadLander and HubSpot reports, which trace PAN's visits to Centripetal's product pages on its website and reports visits from PAN employees who visited the site and consumed data sheets and other content. Trial Tr. at 365:11-366:9, 371:6-21. He also testified about PAN's knowledge of Centripetal's related patents with the same specifications (*id.* at 365:11-371:21; 371:17-21); and of Centripetal's prior litigation against PAN's competitor (*id.* at 371:22-379:19; (PX-589) as well as Centripetal's licensing policies. *Id.* at 379:23-380:15. Mr. Rogers also testified as to Centripetal's competition and options available to customers to obtain intelligence-based defense (*id.* at 363:8-17).

PAN failed to rebut this evidence, which, at a minimum, gives rise to an inference of knowing willful infringement based on a totality of the circumstances. Instead, PAN pointed to witness testimony from Centripetal employees who could not recall or lacked personal knowledge as to whether the Centripetal informed PAN of Centripetal's patents during the parties' discussions: Trial Tr. 1566:8-11; Trial Tr. at 1635:6-10. Thus, PAN failed to present legally sufficient evidence such that a reasonable jury could find no willful infringement.

D. Centripetal Is Entitled to Judgment as a Matter of Law as to Damages

Centripetal's damages are based on PAN's manufacture, use, sale, and offer for sale of the Accused Products and inducement of customers to practice the asserted method claims. The extensive scope of PAN's infringement is reflected in Centripetal's reasonable royalty. It is

undisputed that PAN makes the Accused Products, namely the NGFWs and Panorama in the United States and that these products are sold abroad. Trial Tr. 1058:8-13 (French Tr. at 17:08-20:24); 466:13-23 (Zuk Tr. at 300:01-24 [REDACTED]); [REDACTED]); 865:18-22 (Ralston Tr. at 233:05-19); 1233:20-1234:14.

1. The Keysight License is the Most Comparable License in the Record

The evidence during trial showed that the Keysight License is the most comparable license in the record to the hypothetical negotiation for a reasonable royalty. It is the *only* license concerning Centripetal's patents (Trial Tr. 1721:13-17), and the Keysight litigation ("*Keysight*") specifically involved patents that are technologically comparable and related to the Asserted Patents here. *See, e.g.*, Trial Tr. 1103:5-18; 1095:25-1096:03 (pointing to Dr. Cole's analysis), 1189:21-1190:13, 1190:23-1191:14, 1111:02-1111:15, 1231:19-1232:21, 1504:19-1508:5; Trial Tr. 663:14-680:1. Mr. Malackowski provided testimony that squarely addressed each of the differences in the Keysight License which PAN argues renders the Keysight License not comparable to the hypothetical negotiation. *See e.g.*, Trial Tr. 1128:14-1133:4. Despite certain differences with the Keysight License, including the [REDACTED],⁵ the evidence at trial showed the circumstances of the Keysight License were relatively similar to the circumstances surrounding the hypothetical negotiation. The focus in both cases is the patents asserted against the accused products, and how much money would be paid to Centripetal. Trial Tr. 1230:13-1230:18.

Mr. Malackowski testified that the license was executed less than two years before the

⁵ Keysight indicated they would need three years to discontinue the infringing products. Trial 378:1-7; 1096:24-1097:6.

hypothetical negotiation and that the Keysight License was in effect during the same period as the hypothetical negotiation in this case. As such, the Keysight License is close in time, and certainly closer in time, to the date of the hypothetical negotiation than the patent purchase agreements that PAN's expert, Mr. Bakewell, relied on. Trial Tr. 1095:21-24; 1096:15-1096:23; 1098:18-1099:15; 1103:19-1104:22; 1100:11-1101:11; 1230:6-1231:3.

The evidence showed that Keysight and PAN shared important similarities: 1) they are large publicly traded companies that are based in the U.S. with billions of dollars in annual revenues, 2) they operate in a similar field of technology – network security, 3) the products share similarities, and the customers are the same, namely the customers that each are seeking are the same, enterprise-wide customers for security purposes, 4) their business model is the same in the sense that they spend considerable amounts of money acquiring companies; and there was a royalty on revenues, although PAN tracks invoice billings and Keysight's royalty rate was applied to gross revenues. *See, e.g.*, Trial Tr. 1096:10-1099:15; 1100:9-1105:11; 1109:2-1110:25; PX-699; PX-589.

Mr. Malackowski also testified regarding the relative value of the Asserted Patents to PAN in comparison to Keysight/Ixia. Trial Tr. 1101:15-1103:02. Specifically, he testified that PAN's main line of business is firewalls while Keysight's main line of business is network equipment; PAN is a more notable player in the security market whereas Keysight is a less notable player; the technology provided through the use of the Asserted Patents are core to PAN's business whereas they are not core to Keysight's business; and that asserted patents in each case share the same specifications. Trial Tr. 1101:15-1103:02.

Mr. Malackowski testified about his analysis of *Georgia-Pacific* factors, including that Keysight and PAN were competitors, competing in the marketplace, including based on his

review of the PAN records. Trial Tr. 1114:12-1121:7; PX-713-715, 693. He also testified regarding other relevant factors such as the increased need for security to address modern network threats, the COVID-19 pandemic, the Internet of Things, awards and recognition for Centripetal's innovations, and the benefits of the Asserted Patents, including that they address the shortage of cybersecurity professionals, are based on a zero-trust philosophy that address zero-day threats, and provide enhanced/advanced detection. Trial Tr. 1073:10-1074:12; 1113:21-1114:11; *see* 440:4-447:19, 823:9-826:17; PX-84; PX-654. He further considered testimony that Centripetal does not have a licensing policy and would prefer to provide its own service to customers directly and to have those customers for a lifetime. Trial Tr. 380:11-15; 1086:23-1087:11.

Mr. Malackowski opined with supporting evidence that PAN has and still is obtaining significant value from using the inventions of the asserted claims and the inventions of the asserted claims have significant value. Specifically, Mr. Malackowski has shown, *inter alia*, that technology of the PAN realized revenues of [REDACTED] for the Accused Products, as part of the analysis for *Georgia-Pacific* Factor #6. Trial Tr. 1125:11-1128:3; Slide 37, 38. Mr. Malackowski also showed that PAN's conveyed/derivative sales of non-accused products which were sold with the Accused Products resulted in [REDACTED]. *Id.* In short, Centripetal provided overwhelming and entirely un rebutted evidence of PAN's success from sales of the accused products. Trial Tr. 1122:3-1128:3; *see* Slides 37, 38 and 41.

Mr. Malackowski testified regarding various patent licenses and patent purchase agreements he reviewed and which he opined were not comparable to the hypothetical negotiation. Trial Tr. 1078:20-1095:4. Mr. Malackowski testified that two licenses between

Centripetal and Wake Forest University, and Centripetal and GreatWall Systems are not technically nor economically comparable to the hypothetical negotiation between PAN and Centripetal for the Asserted Patents because the licenses were executed in 2011, the technology licensed was in the early stage of development, the licensors are a not-for-profit university and non-competitive startup, [REDACTED]

[REDACTED] and the technology of the licenses is not comparable to the Asserted Patent technology. Trial Tr. 271:10-272:4; 844:1-10; 1080:5-1087:11. The evidence showed that the technology from GreatWall was helpful, but needed to be further developed quite heavily to make the technology commercially viable. Trial Tr. 203:1-5; 343:24-344:4; 433:11-436:3; 860:15-863:1; 1082:9-1083:3; DX-203.

The evidence also showed that PAN's patent purchase agreements with Aspen Networks, HP, and Verizon were not comparable because they predate the hypothetical negotiation by 5 to 9 years, there was a non-competitive relationship (buyer often being a patent holding company), the patents were not used by PAN, the agreements contained [REDACTED] [REDACTED], and the acquired technologies are not technically comparable to the Asserted Patents. Trial Tr. 272:5-275:19; 1089:24-1095:4, 1713:19-1714:6; DX 296.

In evaluating PAN's patent purchase agreements, PAN's expert, Mr. Bakewell, relied on the deposition testimony of PAN's former in-house counsel, Mr. Ritter, who was not involved with the purchase from Aspen, and who did not know or remember the circumstances surrounding the negotiations for any of the purchase agreements. *See* Trial Tr. 1714:7-1716:12. PAN presented no evidence about how the amounts of the patent purchase agreements were reached. *See* Trial Tr. 1717:16-1718:20. In fact, Mr. Ritter's employment with PAN terminated three years before the hypothetical negotiation, so he was not knowledgeable regarding PAN's

licensing preferences at the hypothetical negotiation. Trial Tr. 1708:25-1709:2; 1718:21-25. Mr. Bakewell also did not analyze the technical or economic comparability of Aspen, HP, or Verizon with Centripetal. Trial Tr. 1719:1-1721:12.

PAN presented no credible evidence that a paid-up, lump-sum royalty totaling no more than [REDACTED] should be awarded to Centripetal for PAN's infringement of the four Patents-In-Suit. PAN's expert, Christopher Bakewell, only landed on [REDACTED] [REDACTED] [REDACTED]. Trial Tr. at 1691:24-1692:11;DX-289.

Further, Mr. Bakewell did not appreciate relevant considerations, including the important technical and economic similarities shared by Keysight and PAN, the direct competition between Keysight and PAN in the marketplace, and the impact of COVID and the Internet of Things. *See* Trial Tr. at 1073:10-1074:12; 1648:10-1745:9. And, Mr. Bakewell overestimated certain considerations, including the [REDACTED] [REDACTED] despite the essence of the Keysight License being similar to the hypothetical negotiation. *See* Trial Tr. at 1668:13-1669:25. Having minimized the relevant evidence, no reasonable jury would have a legally sufficient evidentiary basis to find that damages should be limited to a [REDACTED] as PAN argued. Therefore, Centripetal respectfully requests that judgment as a matter of law of damages in its favor be entered.

(a) The Evidence at Trial Supported An Apportionment Tied to the Footprint of the Invention

Mr. Malackowski's opinion was sufficiently supported with evidence to support his application of the apportioned royalty rates from the Keysight license. He testified regarding the terms of the Keysight License, including that it included [REDACTED] [REDACTED] [REDACTED]. *See, e.g.,* Trial Tr. 663:14-680:1; 1096:15-1197:13; 1113:8-

1131:4; 1231:4-18; 1232:22-1233:19; PX-964 at Exhibit 3.1-U (C).

Mr. Malackowski testified about the greater importance of the technology in suit to PAN relative to the importance of the technology that was licensed to Keysight to Keysight over the period spanning from 2015 to 2023. The number of patents that Keysight had representing their innovation was significantly greater than what PAN would be bringing to the table. Trial Tr. at 1128:4-10. Therefore, based on the foregoing, PAN should pay more, which is reflected in a royalty [REDACTED]. Trial Tr. 1128:11-1130:11. Dr. Cole, based on his many years of expertise in the industry and review of documents, testified about the technical comparability of the asserted patents and products accused in the Keysight and the asserted patents and accused PAN products. Tr. 507:24-512:11; 664:22-666:1; 670:24-680:1. The evidence showed the infringing technologies were “game-changing” because they allow the Accused Products to be able to detect advanced attacks and “zero day threats,” while other non-accused features became commodity features. Tr. 663:1-671:3; 959:1-961:8.

Mr. Malackowski supported the reasonableness of his royalty rate calculations by reviewing third party valuations of technologies acquired by PAN between 2017 and December 2020, including the Demisto acquisition for the infringing XSOAR technology. Trial Tr. 1089:23-1091: 15; 1106:22- 1111:21; Slide 27, 28, and 30; PX-669. He opined, inter alia, that the acquired technologies relate to the Accused Product technologies, that the third-party valuations were performed by experts, and that the majority of valuations determined that a royalty rate of [REDACTED] was attributable to the acquired technologies, including the Demisto acquisition that was completed less than a year before the hypothetical negotiation. Trial Tr. 1018:17-21 (Pritchard Tr., 15:14-16:12, 40:24-51:22); 1108:10-1109:25.

2. The Substantial Evidence Supported Including Worldwide Sales in the Royalty Base

Centripetal provided ample evidence showing that it is entitled to include worldwide sales of the specific combinations of accused products during the relevant past damages period, from March 2021 through April 2023. Trial Tr. at 1126:19-1128:03, 1233:20-1234:14. There was no double counting of revenues across multiple asserted patents. Trial Tr. 1133:05-1133:20.

Specifically, Mr. Malackowski provided his calculations for the worldwide and alternate royalty base which is of invoiced billings after discounts. His support for utilizing worldwide billing includes the testimony of PAN witnesses. See Trial Tr. 1135-19-1138:06; 1139:3-1141:24; Slide 47 and 48; deposition clips of Messrs. Zuk, Lee, and Ralston. Mr. Malackowski's testimony and evidence support his reasonable royalty damages calculation of [REDACTED].

As discussed above, PAN did not dispute that PAN makes the Accused Products, namely the NGFWs and Panorama in the United States and that these products are sold abroad. Trial Tr., 1058:8-13 (French Tr. at 17:08-20:24); *see also*, Trial Tr. 466:13-23 (Zuk Tr. at 300:01-24 [REDACTED]), 865:18-22 (Ralston Tr. at 233:05-19). PAN also markets and sells the Cortex as integrated solutions to be used in combination with the NGFWs and sells the infringing combinations globally from the U.S. See Trial Tr., 1017:25-1018:6 (Lee Tr., 83:02-83:19 [REDACTED]). For these reasons, Centripetal proved by overwhelming evidence that it is entitled to damages in the amount of no less than a reasonable royalty as a result of PAN's infringement.

II. CONCLUSION

For the foregoing reasons, Centripetal respectfully requests that the Court grant Centripetal's Motion for Judgment as a Matter of Law.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on January 31, 2024, I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system, which will automatically send notification of filing electronic to all counsel of record.

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